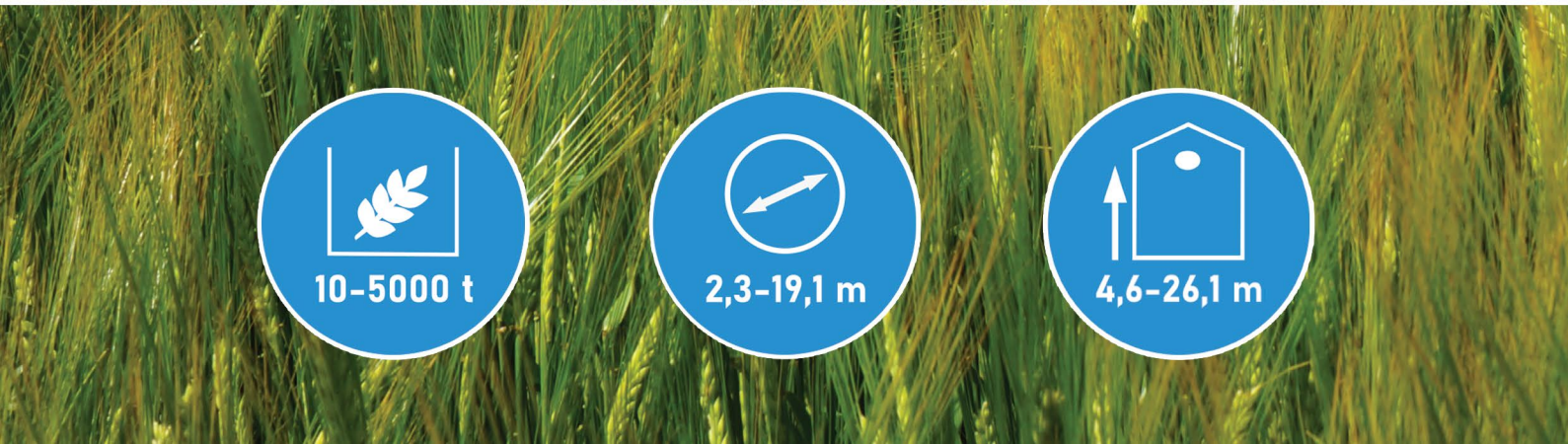
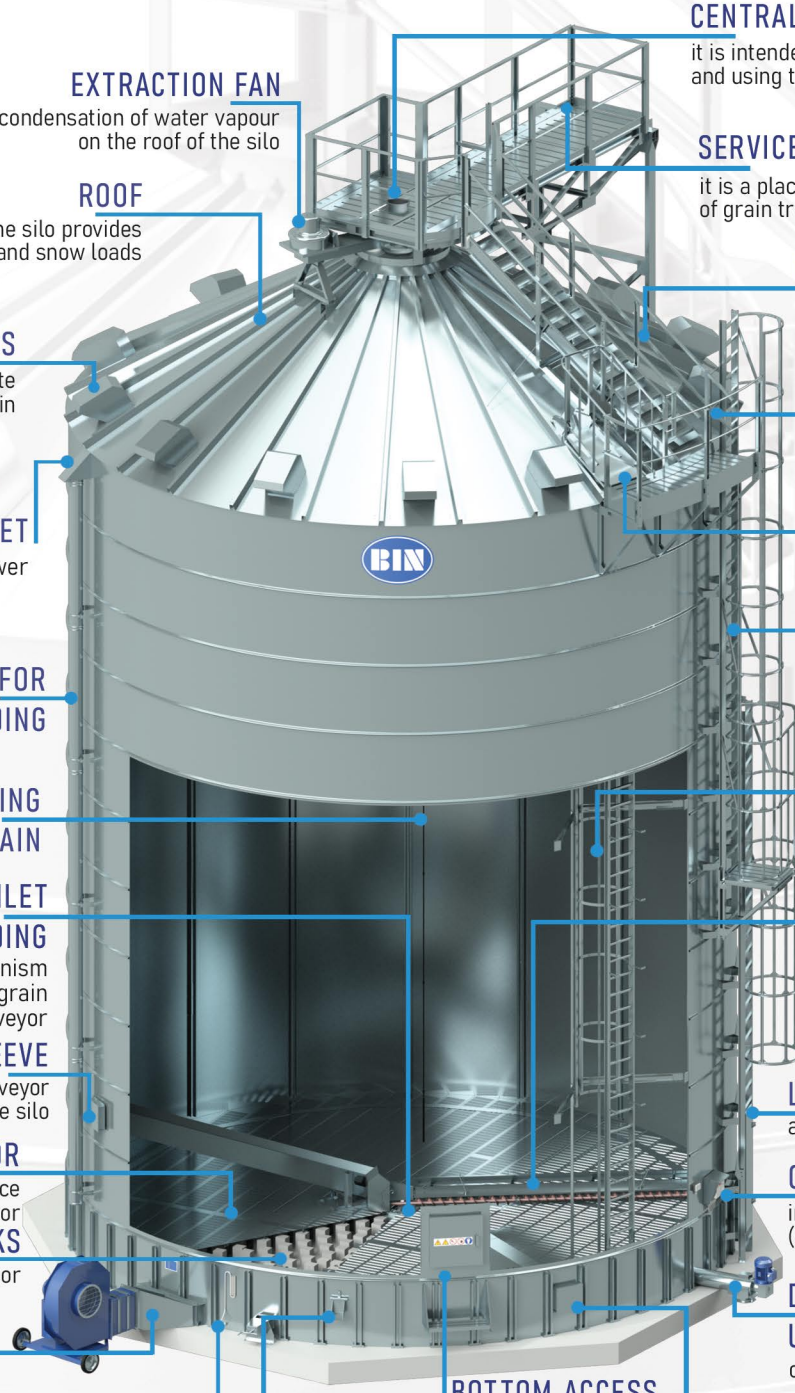
QUALITY | EXPERIENCE | PASSION

FLAT BOTTOM SILOS FOR GRAIN STORAGE

MADE OF FLAT AND CORRUGATED SHEETS OF STEEL



FLAT BOTTOM SILO FOR GRAIN STORAGE MADE OF FLAT SHEETS OF STEEL



CENTRAL LOADING INLET
it is intended for connecting loading equipment and using the entire operational volume of the silo

SERVICE CATWALK
it is a place for comfortable operation of grain transport equipment

ROOF STAIRS
they provide convenient access to the catwalk of the silo or silo crown stand

PLATFORM
it is designed for convenient access to the roof hatch and roof stairs

ROOF HATCH
gives access into the silo

EXTERNAL LADDER
with protection
OR SPIRAL STAIRS

INTERNAL LADDER
with a safety cage

INTERNAL SWEEP AUGER CONVEYOR
it unloads grain, which is not transferred gravitationally to the underfloor conveyor

LADDER PROTECTION
against unauthorized entry

CONTROL MODULE OF THE SILO
informs about status of silo hatches (open/closed) and about its full loading

DISCHARGE CONVEYOR UNDER THE FLOOR
of screw or chain (scraper) type

EMERGENCY OUTLET OF GRAIN
enables to discharge the silo in the case of a failure of the underfloor conveyor or clogging the central discharge inlet that is mounted in the centre of the silo's floor

BOTTOM ACCESS MANHOLE
with double door and anti-slip **PLATFORM**

BAG FILLING DEVICE
with anti-dynamic pipe for protecting silo shell against damage

EXTRACTION FAN
prevents condensation of water vapour on the roof of the silo

ROOF
solid roof of the silo provides high resistance to wind and snow loads

ROOF EXHAUSTERS
ensure adequate ventilation of grain

SIDE LOADING INLET
is used for loading with the blower

TUBE FOR PNEUMATIC LOADING

PROBE FOR MEASURING TEMPERATURE OF THE GRAIN

CENTRAL DISCHARGE INLET DEDICATED FOR UNLOADING
equipped with an opening mechanism with a latch, used to carry out the grain from the silo into underfloor conveyor

UNLOADING SLEEVE
it allows inclined screw conveyor to be introduced into the silo

FULLY PERFORATED FLOOR
covering the entire surface of the silo's floor

CONCRETE BLOCKS
serve as supports of the silo's floor

AIR INLET
for connecting the fan forcing air

WATER PRESSURE MANOMETER
indicates the pressure of air flowing through the grain

Type of this equipment varies depending on the silo model.

ADVANTAGES OF THE SILO

- long-term grain storage
- reasonable price
- reduces the risk of mould and pests

FUNCTIONALITY

- for the storage of grain, cereals, corn and oilseeds
- cooling and drying of stored grain
- equipment for mechanized loading and unloading of grain

DESIGN

- high-quality galvanized sheets of steel and fasteners
- the roof is ribbed to prevent rain entering the silo
- they meet required parameters of fire resistance

ENSURE PROPER CONDITIONS OF GRAIN STORAGE IN THE SILO

FORCED VENTILATION FAN

FOR COOLING, AERATING AND DRYING GRAIN

AIR HEATER

FOR HEATING AIR THAT DRIES GRAIN

PERFORATED FLOOR

PERFORATION OF ENTIRE FLOOR SURFACE
ENSURES EFFICIENT VENTILATION

TEMPERATURE PROBE

FOR MEASURING TEMPERATURE
OF STORED GRAIN

EXTRACTION FAN

REMOVES DUST AND HUMID AIR
FROM THE SPACE ABOVE GRAIN,
PREVENTS CONDENSATION
UNDER ROOF OF THE SILO

SILOS UNLOADING

BAG FILLING DEVICE

- used for unloading small quantities of grain
- installed in small silos

UNLOADING SLEEVE

- is used to house the inclined screw conveyor
- we recommend the SLEEVE EXTENTION – the conveyor will be able to take more grain without the need to manually scooping it to the conveyor inlet

UNDERFLOOR CONVEYOR

- of screw or chain (scraper) type
- the grain is provided to this conveyor through the inlet in the middle of the floor
- it transfers grain outside the silo

INTERNAL SWEEP AUGER CONVEYOR

- it gathers grain that could not be transferred gravitationally to the underfloor conveyor

EMERGENCY OUTLET OF GRAIN

- it is located on the floor or under the floor
- it is used in the case of a failure of unloading equipment or grain caking above the inlet to the underfloor conveyor

SILOS LOADING

SILOS LOADING BLOWER

- it is a pneumatic loading system designed for small silos
- with own charging hopper
- the same fan is used to ventilate the silo
- it transports grain vertically to a height of 7m and offers a conveying capacity up to 6t/h

VERTICAL SCREW CONVEYOR

- very compact
- with own charging hopper
- suitable for connecting to the underfloor conveyor and using for unloading grain to a trailer
- it transports grain vertically to a height of 13,8m and offers a conveying capacity up to 24t/h

BUCKET ELEVATOR

- it is used to load the grain storages consisting of several silos
- it can be supported by a tower, pipe roller support (PRS) or fixed to the silo
- it transports grain to a height of 34,2m and offers a conveying capacity up to 120t/h

INTAKE HOPPERS

- of overrun and non-overrun type
- of screw or scraper type

- ☑ since 1990 we have delivered over 72 000 silos to Polish and European farmers
- ☑ since 2014 we have been controlling the quality of anti-corrosion coating of connectors in a brine chamber
- ☑ we have been granted a Certificate of Factory Production Control issued by the Institute of Welding in Gliwice city called Łukasiewicz - Upper Silesian Institute of Technology
- ☑ our silos are designed according to European construction standards called Eurocodes, we provide our customers with free project of the silos in the electronic version

MODELS OF FLAT BOTTOM SILOS MADE OF FLAT SHEETS OF STEEL

	NBIN 10	NBIN 10W	NBIN 20N	NBIN 20	NBIN 20W	NBIN 20WW	NBIN 40NS	NBIN 40S	NBIN 40WS	NBIN 40WWS	NBIN 60	NBIN 60W	NBIN 60WW
LOADING CAPACITY (t)*	10,5	13,5	19,7	22,4	28,1	33,8	33,8	42,0	50,3	58,5	57,7	68,8	91,0
VOLUME (m^3)	15,6	19,5	26,3	29,9	37,4	45,0	45,0	56,0	67,0	78,0	76,9	91,7	121,3
HEIGHT (m)**	4,6	5,5	4,3	4,8	5,8	6,7	5,0	5,9	6,9	7,8	6,1	7,1	9,0
DIAMETER (m)	2,3		3,2				3,8				4,5		
ACCESS – external ladder	S		S			S	S		S		S	S	S
ACCESS – internal ladder	S		S			S	S		S		S	S	S
ACCESS – spiral stairs	-		-			-	-		-		-	-	-
ACCESS – roof stairs	-		-			-	-		-		-	-	-
ACCESS – crown platform	-		-			-	-		-		-	-	-
ACCESS – service catwalk	-		-			-	-		-		O	O	O
ACCESS – bottom access manhole	-		O			O	O		O		O	O	S
ACCESS – roof hatch	S		S			S	S		S		S	S	S
ACTIVE VENTILATION – flat perforated floor	S		S			S	O		O		S	S	S
ACTIVE VENTILATION – inside perforated hopper	-		-			-	O		O		O	O	O
ACTIVE VENTILATION – air inlet	S Ø310		S Ø310			S Ø310	O Ø310		O Ø310		S Ø310	S Ø310	S Ø310
ACTIVE VENTILATION – universal air inlet	-		-			-	-		-		-	-	-
ACTIVE VENTILATION – fan forcing air	O WPR		O WPR			O WPR	O WPR		O WPR		O WPR	O WPR	O WPR
ACTIVE VENTILATION – extraction fan	O		O			O	O		O		O	O	O
ACTIVE VENTILATION – air heater	O 4,5kW		O 4,5kW			O 4,5kW	O 4,5kW		O 4,5kW		O 4,5kW	O 4,5kW	O 4,5kW
ACTIVE VENTILATION – roof exhauster	-		-			-	S 1pc		S 1pc		S 1pc	S 1pc	S 1pc
ACTIVE VENTILATION – water-filled manometer	S		S			S	O		O		S	S	S
ACTIVE VENTILATION – temperature probe	O		O			O	O		O		O	O	O
LOADING AND UNLOADING – central loading inlet	S		S			S	S		S		S	S	S
LOADING AND UNLOADING – side loading inlet	S		S			S	O		O		S	S	O
LOADING AND UNLOADING – bag filling device	S		S			S	S		S		S	S	⌐O + └O
LOADING AND UNLOADING – anti-dynamic pipe of bag filling device	-		-			S	-		S		-	S	
LOADING AND UNLOADING – unloading sleeve	-		O			O	O		O		O	O	O
LOADING AND UNLOADING – unloading sleeve extension	-		O			O	O		O		O	O	O
LOADING AND UNLOADING – emergency outlet of grain	-		-			-	O		O		O	O	S
LOADING AND UNLOADING – underfloor discharge conveyor	O		O			O	O		O		O	O	O
LOADING AND UNLOADING – internal sweep auger conveyor	-		-			-	-		-		O	O	O
LOADING AND UNLOADING – control module of the silo	O		O			O	O		O		O	O	O

* the loading capacity for wheat with a density 750kg/m^3 related to the usable volume; the actual volume of material gathered in the silo depends among others on the method of loading, bulk properties of the material, allowable maximum level of silo filling, etc.

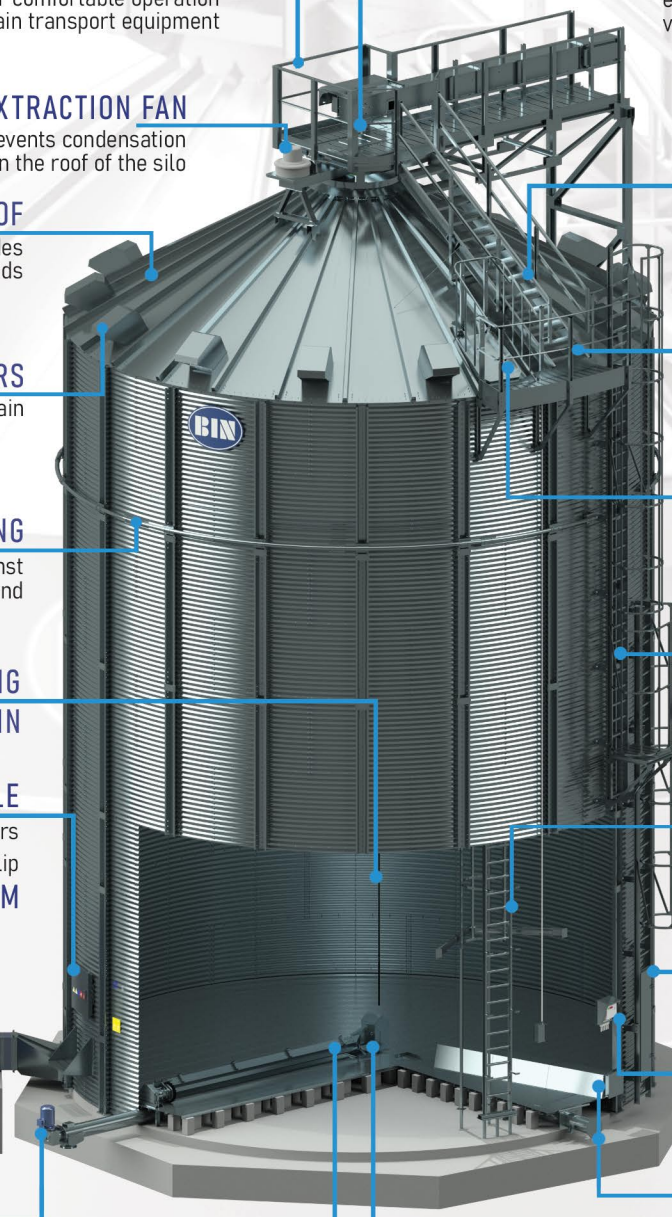
** height measured from the surface of the foundation to the central loading inlet in the roof

STANDARD AND OPTIONAL EQUIPMENT:

NBIN 100U	NBIN 100WU	NBIN 200NU	NBIN 200U	NBIN 200WU	NBIN 500	NBIN 501W	NBIN 1001	NBIN 1001W	NBIN 1500N	NBIN 1500P	NBIN 1500	NBIN 1500W
99,8	132	185	211	261	521	604	948	1095	1170	1285	1514	1744
133	176	247	281	348	695	805	1264	1460	1560	1713	2019	2325
7,2	9,1	8,6	9,6	11,5	13,9	15,8	14,7	16,6	12,7	13,7	15,5	17,4
5,4		6,7			8,6		11,5		14,3			
S	S	O	O	O	O		O		O			
S	S	S	S	S	S		S		S			
-	-	O	O	O	O		O		O			
O	O	O	O	O	O		O		O			
O	O	O	O	O	O		O		O			
O	O	O	O	O	O		O		O			
S	S	S	S	S	S		S		S			
S	S	S	S	S	S		S		S			
S	S	S	S	S	S		S		S			
-	-	-	-	-	-		-		-			
S Ø310	S Ø310	S Ø400	S Ø400	S Ø400	S Ø400		S Ø400		S Ø400			
-	-	O	O	O	O		O		O			
O WPR	O WPR	O WPR	O WPR	O WPR	O WPR		O WPR		O WPR			
O	O	O	O	O	O		O		O			
O 4,5kW	O 4,5kW	O 9kW	O 9kW	O 9kW	-		-		-			
S 2pcs	S 3pcs	S 10pcs	S 10pcs	S 10pcs	S 12pcs		S 18pcs		S 32pcs			
S	S	S	S	S	S		S		S			
O	O	O	O	O	O		O		O			
S	S	S	S	S	S		S		S			
S	S	O	O	-	-		-		-			
O	O	-	-	-	-		-		-			
O	O	-	-	-	-		-		-			
O	O	-	-	-	-		-		-			
O	O	-	-	-	-		-		-			
S	S	S	S	S	S		S		S			
O	O	O	O	O	O		O		O			
O	O	O	O	O	O		O		O			
O	O	O	O	O	O		O		O			

S - standard, O - optional

FLAT BOTTOM SILO FOR GRAIN STORAGE MADE OF CORRUGATED SHEETS OF STEEL



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ROOF STAIRS
they provide convenient access to the catwalk of the silo

ROOF
solid roof of the silo provides high resistance to wind and snow loads

PLATFORM
it is designed for convenient access to the roof hatch and roof stairs

ROOF EXHAUSTERS
ensure adequate ventilation of grain

ROOF HATCH
allows entry into the silo or inspection of the silo in case of internal ladder absence

REINFORCING RING
protects the shell against damage caused by wind

EXTERNAL LADDER
with protection
OR SPIRAL STAIRS

PROBE FOR MEASURING TEMPERATURE OF THE GRAIN

BOTTOM ACCESS MANHOLE
with double doors and anti-slip
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CENTRAL DISCHARGE INLET DEDICATED FOR UNLOADING
equipped with an opening mechanism with a latch, used to carry out the grain from the silo into underfloor conveyor

Type of this equipment varies depending on the silo model.

CORRUGATED STEEL SILOS WITH FLAT BOTTOM MODELS FBIN:

TYPE	FBIN7							FBIN9					FBIN11							
MODEL	FBIN 7/5	FBIN 7/6	FBIN 7/7	FBIN 7/8	FBIN 7/9	FBIN 7/10	FBIN 7/11	FBIN 9/10	FBIN 9/11	FBIN 9/12	FBIN 9/13	FBIN 9/14	FBIN 11/10	FBIN 11/11	FBIN 11/12	FBIN 11/13	FBIN 11/14	FBIN 11/15	FBIN 11/16	FBIN 11/17
LOADING CAPACITY (t)*	166	197	228	259	291	322	352	553	605	656	708	760	1005	1097	1190	1281	1373	1464	1556	1647
VOLUME (m^3)	213	252	293	333	373	413	452	709	775	842	908	974	1289	1407	1525	1642	1760	1877	1995	2112
HEIGHT (m)**	7,7	8,8	10,0	11,1	12,2	13,4	14,5	13,9	15,0	16,2	17,3	18,4	14,7	15,9	17,0	18,2	19,3	20,4	21,6	22,7
DIAMETER (m)	6,7							8,6					11,5							

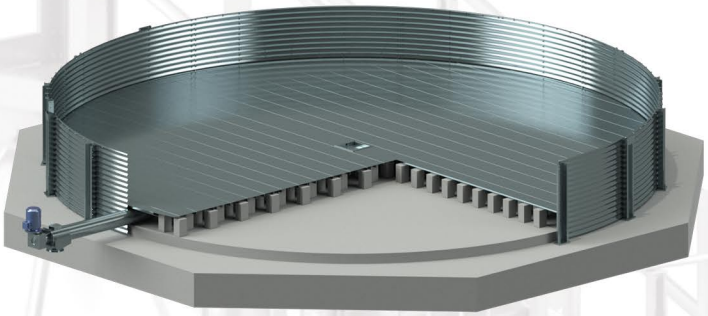
* the loading capacity for wheat with a density 780kg/m^3 related to the silo volume given below; the actual volume of material gathered in the silo depends among others on the method of loading, bulk properties of the material, allowable maximum level of silo filling, floor type, etc.

** height measured from the surface of the foundation to the central loading inlet in the roof

WE CAN OFFER VARIOUS TYPES OF FLOORS TO THE SILOS MADE OF CORRUGATED SHEETS OF STEEL:

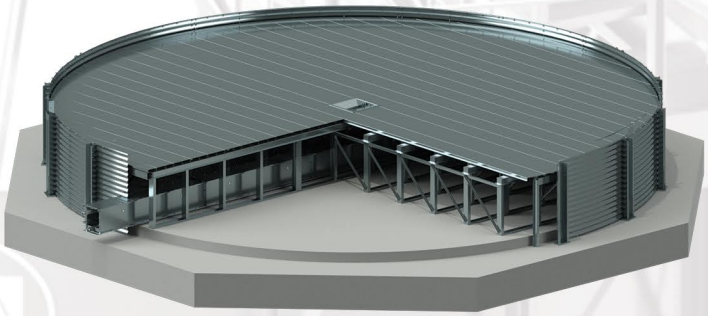
FULLY PERFORATED FLOOR MADE OF STEEL MOUNTED ON THE CONCRETE BLOCKS

- suitable for the silos with the shell up to 12 rings high
- there is a space to mount PS220 screw conveyor with the conveying capacity of up to 70 tons per hour under the floor
- foundation slab is easy to build and inexpensive
- one or two fans for grain ventilation
- whole surface of the floor is perforated



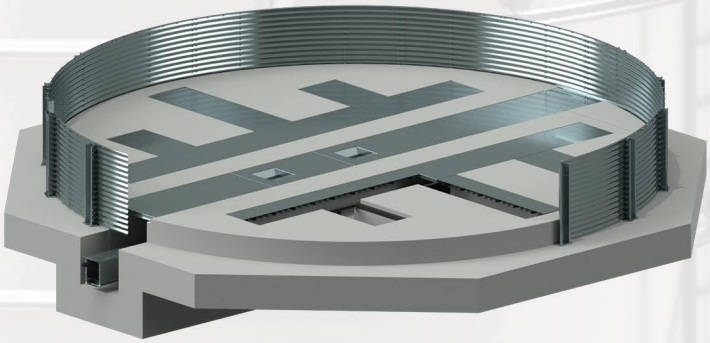
FULLY PERFORATED FLOOR MADE OF STEEL BASED ON SUPPORTING GRILL MADE OF STEEL

- suitable for all types of silos
- there is a space to mount chain conveyor (scraper conveyor) with the conveying capacity of up to 150 tons per hour under the floor
- foundation slab is easy to build and inexpensive
- one or two fans for grain ventilation
- whole surface of the floor is perforated



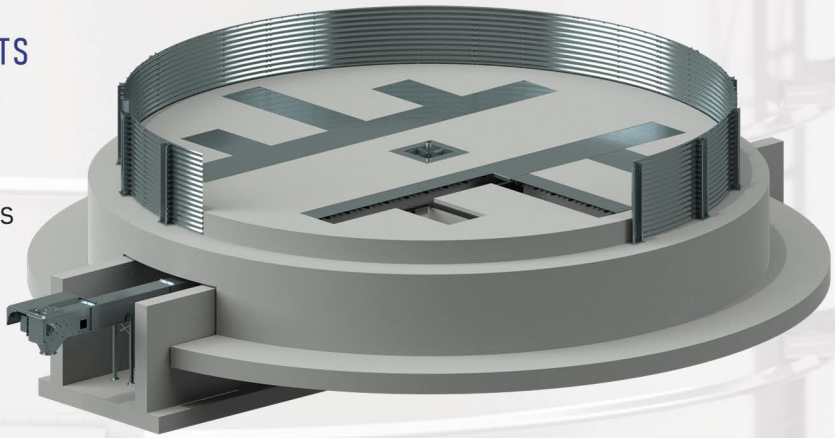
CONCRETE FLOOR WITH VENTILATION DUCTS

- there is channel dedicated for chain conveyor (scraper conveyor) in the concrete foundation
- we offer prefabricated foundation formworks that helps to build up ventilation ducts
- two fans for grain ventilation
- up to 35 % of the floor can be ventilated



CONCRETE FLOOR WITH VENTILATION DUCTS AND A PASSABLE MAINTENANCE CHANNEL

- constant and convenient access to the chain conveyor (scraper conveyor)
- we offer prefabricated foundation formworks that helps to build up ventilation ducts
- two fans for grain ventilation
- up to 35 % of the floor can be ventilated



FBIN14								FBIN17						FBIN19			
FBIN 14/10	FBIN 14/11	FBIN 14/12	FBIN 14/13	FBIN 14/14	FBIN 14/15	FBIN 14/16	FBIN 14/17	FBIN 17/14	FBIN 17/15	FBIN 17/16	FBIN 17/17	FBIN 17/18	FBIN 17/19	FBIN 19/15	FBIN 19/16	FBIN 19/17	FBIN 19/18
1606	1750	1893	2036	2179	2323	2466	2609	3005	3200	3395	3590	3785	3981	4232	4487	4741	4996
2059	2243	2427	2610	2794	2978	3161	3345	3853	4103	4353	4603	4853	5104	5425	5752	6078	6405
15,6	16,7	17,9	19,0	20,1	21,3	22,4	23,6	20,9	22,0	23,2	24,3	25,4	26,6	22,7	23,8	25,0	26,1
14,3								16,7						19,1			

WE DESIGN AND INSTALL FULLY INTEGRATED SYSTEMS FOR GRAIN STORAGE

4 x NBIN1001W + 3 x NBIN1500W

PLEASE FIND OUR FULL OFFER:

- FLAT BOTTOM SILOS FOR GRAIN STORAGE
- HOPPER BOTTOM SILOS FOR GRAIN STORAGE
- DEVICES FOR GRAIN TRANSPORTATION
- FEED SILOS AND EQUIPMENT FOR ON-FARM FEED MILLS
- AGRICULTURAL SHEDS
- RETENTION TANKS

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